Complete Summary

GUIDELINE TITLE

Treatment of hyperlipidaemia: aims and selection.

BIBLIOGRAPHIC SOURCE(S)

Strandberg T, Vanhanen H. Treatment of hyperlipidaemia: aims and selection. In: EBM Guidelines. Evidence-Based Medicine [CD-ROM]. Helsinki, Finland: Duodecim Medical Publications Ltd.; 2005 Jun 10 [various].

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Finnish Medical Society Duodecim. Treatment of hyperlipidaemia: aims and selection. In: EBM Guidelines. Evidence-Based Medicine [CD-ROM]. Helsinki, Finland: Duodecim Medical Publications Ltd.; 2004 Sep 30 [Various].

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Hyperlipidaemia

GUIDELINE CATEGORY

Prevention
Risk Assessment
Treatment

CLINICAL SPECIALTY

Family Practice
Internal Medicine

INTENDED USERS

Health Care Providers
Physicians

GUIDELINE OBJECTIVE(S)

Evidence-Based Medicine Guidelines collects, summarizes, and updates the core clinical knowledge essential in general practice. The guidelines also describe the scientific evidence underlying the given recommendations.

TARGET POPULATION

Individuals with hyperlipidaemia, especially those with atherosclerotic disease, ischaemic heart disease (IHD), or non-insulin-dependent diabetes mellitus

INTERVENTIONS AND PRACTICES CONSIDERED

1. Assess and modify risk factors
2. Rule out secondary hypercholesterolaemia (measure serum thyroid-stimulating hormone, fasting blood glucose, urine test)
3. Change living habits of patients
4. Diet therapy; counseling on healthy diet
5. Investigate lipid levels of relatives
6. Drug therapy
7. Monitor serum total cholesterol, low-density lipoprotein (LDL) cholesterol, high-density lipoprotein (HDL) cholesterol, triglycerides

MAJOR OUTCOMES CONSIDERED

- Efficacy of treatment for hyperlipidaemia on serum levels of total cholesterol, low-density lipoprotein cholesterol, high-density lipoprotein cholesterol, triglycerides
- Incidence of ischaemic heart disease or atherosclerotic disease
- Mortality

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The evidence reviewed was collected from the Cochrane database of systematic reviews and the database of abstracts of reviews of effectiveness (DARE). In addition, the Cochrane Library and medical journals were searched specifically for original publications.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Levels of Evidence

A. Strong research-based evidence. Multiple relevant, high-quality scientific studies with homogenic results.
B. Moderate research-based evidence. At least one relevant, high-quality study or multiple adequate studies.
C. Limited research-based evidence. At least one adequate scientific study.
D. No research-based evidence. Expert panel evaluation of other information.

METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses
Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Not stated

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

The levels of evidence [A-D] supporting the recommendations are defined at the end of the "Major Recommendations" field.

Basic Rules

- The goals are:
  - Secondary prevention of arterial disease. (The most important patient group to be treated is patients with diagnosed arterial disease.)
  - Decreasing the risk of atherosclerotic arterial disease guided by the total risk (combined effect of risk factors). The assessment of the risk for arterial disease may be facilitated by the use of different risk calculators (e.g., SCORE).
- Changing living habits is the primary target in all patients.
- Rule out secondary hypercholesterolaemia before starting drug treatment (serum thyroid-stimulating hormone [TSH], fasting blood glucose, urine test).
- The aim of treatment is to maintain:
  - Serum cholesterol under 5.0 mmol/L (under 4.5 mmol/L high-risk individuals)
  - Serum low-density lipoprotein (LDL) cholesterol under 3.0 mmol/L (high-risk individuals under 2.5 mmol/L). (For calculation, see LDL calculator program available on the Evidence-Based Medicine [EBM] CD-ROM and EBM Web site.)
  - Serum high-density lipoprotein (HDL) cholesterol over 1.0 mmol/L
  - Serum triglyceride under 2.0 mmol/L
  - Serum cholesterol: serum HDL cholesterol ratio under 4.0
- The treatment of a low HDL cholesterol concentration and a high serum triglyceride concentration is probably beneficial, at least in patients with non-insulin-dependent diabetes mellitus.
- The serum triglyceride concentration should be under 10 mmol/L to minimize the risk of pancreatitis.

Patients with Ischaemic Heart Disease

- The risk of myocardial infarction or cardiac death increases sharply with rising serum cholesterol concentrations in patients with ischaemic heart disease.
- The effectiveness of drug treatment has been clearly shown in controlled studies ("Randomised trial of cholesterol lowering," 1994) [A]. The target serum cholesterol concentration is under 4.5 mmol/L (LDL cholesterol under 2.5 mmol/L). There is evidence that patients with coronary diseases benefit from even lower LDL levels (well under 2 mmol/L) (Cannon, Braunwald, & McCabe, 2004).
- See table "Hypercholesterolaemia in Patients with Ischaemic Heart Disease" below.

Patients with Other Atherosclerotic Diseases (Cerebrovascular Disease, Peripheral Arterial Disease)

- See above.

Symptomless Individuals

- The general target serum cholesterol level is under 5.0 mmol/L (LDL cholesterol under 3.0 mmol/L). When considering indications for intervention, the age and sex and total risk of the patient should be taken into account. (Those of working age are the most important group.) See table "Hypercholesterolaemia in Asymptomatic Individuals" below.
- In high-risk symptomless individuals the lipid target is serum (S)-cholesterol under 4.5 mmol/L (LDL cholesterol under 2.5 mmol/L).

Elderly Patients (>80 years)

- There are no randomized prognostic studies in this age group.
- The biological age and the general prognosis should be taken into account when deciding on treatment.
- The principles of treatment are the same as in younger patients.

Related Evidence

- There is little evidence that low or reduced serum cholesterol concentration significantly increases mortality from any cause other than haemorrhagic stroke. This risk affects only people with a very low concentration, and even in these the risk is outweighed by the benefits from the low risk of ischaemic heart disease, at least in patients with ischaemic heart disease (Law, Thompson, & Wald, 1994) [B].
- Aerobic exercise training produces small favourable changes in blood lipids (Halbert et al., 1999) [B].

Hypercholesterolaemia in Patients with Ischaemic Heart Disease

Serum cholesterol (mmol/L)	LDL cholesterol (mmol/L)	Risk of disease progression	Action
4.5 or higher	2.5 or higher	Greatly increased	Improve diet, change living habits, control cholesterol levels in 1 to 2 months. Reduce risk by modifying other risk factors. Drug therapy is always indicated if target levels are not reached.

Hypercholesterolaemia in Asymptomatic Individuals

Serum cholesterol (mmol/L)	LDL cholesterol (mmol/L)	Risk of disease progression	Action
8.0 or higher	6.5 or higher	Greatly increased	Assess risk factors. Improve diet and change living habits. Control cholesterol levels in 2 to 3 months. Drug therapy is indicated if values near the target levels are not reached. The probability of an inherited disorder is high. Relatives should be investigated.
6.5 to 7.9	5.0 to 6.4	Moderately increased	Assess risk factors and start dietary therapy. Control cholesterol levels in 6 months. Further measures (drug treatment) according to outcome of dietary therapy and other risk factors. Hereditary disorders of lipid metabolism are possible (and should be treated in the same way as patients with serum cholesterol above 8 mmol/L).
5 to 6.4	3.0 to 4.9	Slightly increased	Counselling on healthy diet and assessment of risk factors. Further measures according to other risk factors. Control of serum cholesterol after about 5 years.

Definitions:

Levels of Evidence

A. Strong research-based evidence. Multiple relevant, high-quality scientific studies with homogenic results.
B. Moderate research-based evidence. At least one relevant, high-quality study or multiple adequate studies.
C. Limited research-based evidence. At least one adequate scientific study.
D. No research-based evidence. Expert panel evaluation of other information.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

REFERENCES SUPPORTING THE RECOMMENDATIONS

References open in a new window

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

Concise summaries of scientific evidence attached to the individual guidelines are the unique feature of the Evidence-Based Medicine Guidelines. The evidence summaries allow the clinician to judge how well-founded the treatment recommendations are. The type of supporting evidence is identified and graded for select recommendations (see the "Major Recommendations" field).

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- Secondary prevention of ischaemic heart disease
- Decreased risk of atherosclerotic arterial disease

POTENTIAL HARMS

There is little evidence that low or reduced serum cholesterol concentration significantly increases mortality from any cause other than haemorrhagic stroke. This risk affects only people with a very low concentration, and even in these the risk is outweighed by the benefits from the low risk of ischaemic heart disease, at least in patients with ischaemic heart disease.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Living with Illness
Staying Healthy

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Strandberg T, Vanhanen H. Treatment of hyperlipidaemia: aims and selection. In: EBM Guidelines. Evidence-Based Medicine [CD-ROM]. Helsinki, Finland: Duodecim Medical Publications Ltd.; 2005 Jun 10 [various].

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2001 Jan 4 (revised 2005 Jun 10)

GUIDELINE DEVELOPER(S)

Finnish Medical Society Duodecim - Professional Association

SOURCE(S) OF FUNDING

Finnish Medical Society Duodecim

GUIDELINE COMMITTEE

Editorial Team of EBM Guidelines

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Primary Authors: Timo Strandberg; Hannu Vanhanen

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Finnish Medical Society Duodecim. Treatment of hyperlipidaemia: aims and selection. In: EBM Guidelines. Evidence-Based Medicine [CD-ROM]. Helsinki, Finland: Duodecim Medical Publications Ltd.; 2004 Sep 30 [Various].

GUIDELINE AVAILABILITY

This guideline is included in a CD-ROM titled "EBM Guidelines. Evidence-Based Medicine" available from Duodecim Medical Publications, Ltd, PO Box 713, 00101 Helsinki, Finland; e-mail: info@ebm-guidelines.com; Web site: www.ebm-guidelines.com.

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on August 28, 2001. The information was verified by the guideline developer as of October 26, 2001. This summary was updated by ECRI on December 9, 2002, April 2, 2004, June 15, 2004, February 18, 2005, and most recently on August 7, 2006.

COPYRIGHT STATEMENT

DISCLAIMER

NGC DISCLAIMER

The National Guideline Clearinghouse™ (NGC) does not develop, produce, approve, or endorse the guidelines represented on this site.

All guidelines summarized by NGC and hosted on our site are produced under the auspices of medical specialty societies, relevant professional associations, public or private organizations, other government agencies, health care organizations or plans, and similar entities.

Guidelines represented on the NGC Web site are submitted by guideline developers, and are screened solely to determine that they meet the NGC Inclusion Criteria which may be found at http://www.guideline.gov/about/inclusion.aspx.

NGC, AHRQ, and its contractor ECRI make no warranties concerning the content or clinical efficacy or effectiveness of the clinical practice guidelines and related materials represented on this site. Moreover, the views and opinions of developers or authors of guidelines represented on this site do not necessarily state or reflect those of NGC, AHRQ, or its contractor ECRI, and inclusion or hosting of guidelines in NGC may not be used for advertising or commercial endorsement purposes.

Readers with questions regarding guideline content are directed to contact the guideline developer.

Date Modified: 9/25/2006